



— BUREAU OF —
RECLAMATION

American River Group

1:30 PM – 3:30 PM

Conference Line: 1.415.594.5500 Access Code: 490-125-520#

Webinar: <https://join.me/kearnswest>

Thursday, July 16, 2020

Agenda

1. Introductions
2. Operations Forecast
 - a. SMUD
 - b. PCWA (handout only)
 - c. Central Valley Operations
3. Central Valley Operations
 - a. Temperature Management
 - b. Exceedance Forecast
4. Discussion
5. Next Meeting: Thursday, August 20, 1:30-3:30pm

SMUD Upper American River Project Update

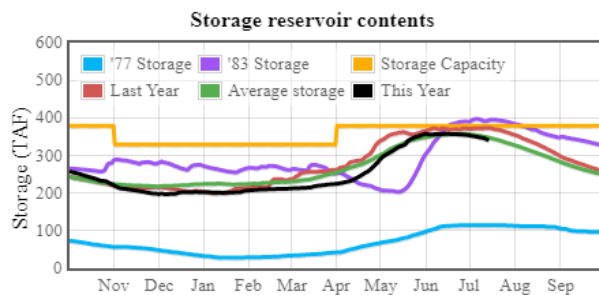
Conditions – 14 July 2020:

July precipitation through 7/14/2020 7:00:00 AM is .00 in., which is 0% of the July average of .08". Precip for the water year to date is 35.48" which is 63% of average to date (56.06") and 62% of the entire water year average of 57.32".

Combined reservoir storage for Loon Lake, Union Valley and Ice House Reservoirs:

- 340,566 acre feet
- 90% capacity
- 98% of historical average (14 July historical average: 347,594 AF / 92%)
- 2% decrease in storage since last week

Individual reservoir storage: (Figure 1)



- Loon Lake: 63,100 AF
- Ice House: 29,175 AF
- Union Valley: 248,292 AF

Last year today, storage was at 98% (372,933 AF). *Total non-winter capacity: 379,174 AF.

June 2020 releases:

- 871 cfs average flows below Chili Bar
- 51,820 total AF released below Chili Bar

July releases (July 1-13):

- 667 cfs average flows below Chili Bar
- 17,190 total AF released below Chili Bar
- On 7/13, Chili Bar was releasing an average of 614 cfs

Runoff into the storage reservoir basins is 70% of median to date through Jul 13. The snowpack is 0% of average at selected snow sensors.

Runoff Forecast (in cfs, daily average forecast) (Figure 2)

BASIN	Fri 17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul
SFA above Slab	80.0	74.6	71.7	68.9	66.1	63.5
Slab Creek	120.9	118.9	116.9	114.9	113.0	111.1
Combined South Fork	201	194	189	184	179	175

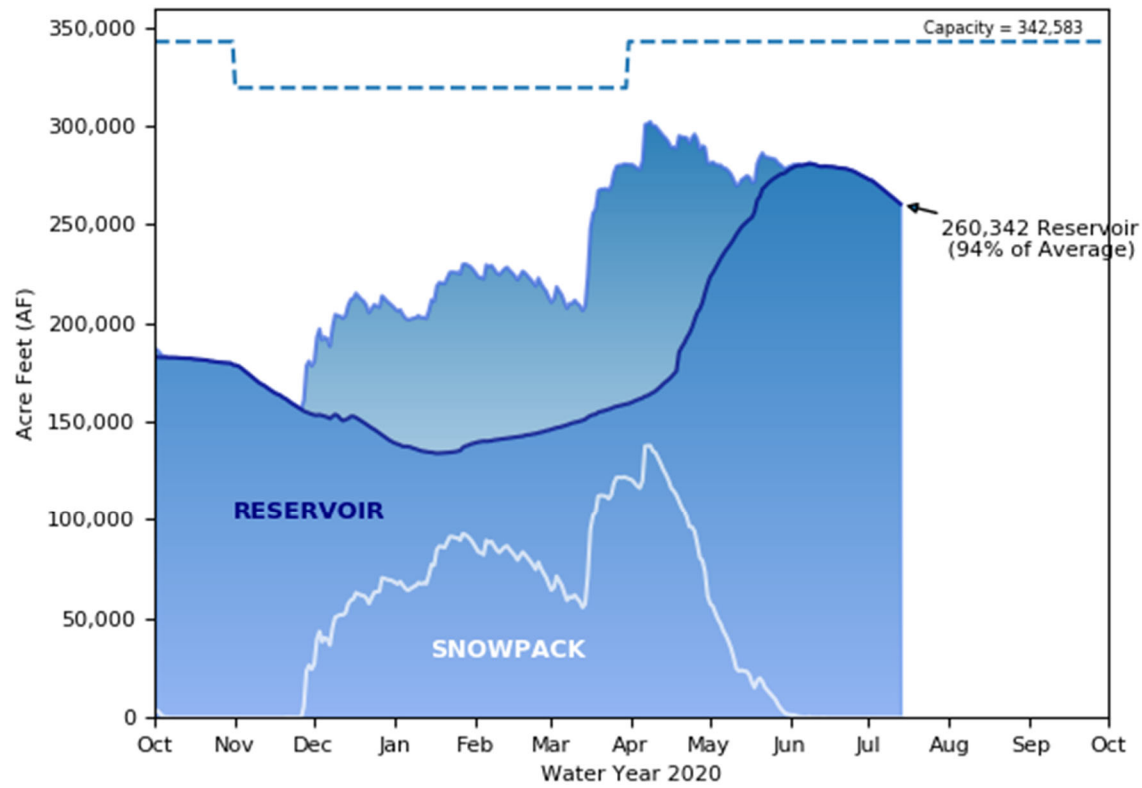
PCWA MFP OPERATIONS OVERVIEW for American River Operations Group (Real Time Data as of July 14, 2020)

- ❖ **French Meadows Storage = 106,000 AF of 136,405 AF = 78% Capacity**
 - MFAR above FM Inflow (R24) = ~1 cfs
- ❖ **Hell Hole Storage = 153,000 AF of 207,590 AF = 74% Capacity**
 - Five Lakes Inflow (R23) = ~25 cfs
 - Rubicon Inflow (R22) = ~25 cfs
- ❖ **Combined Storage (FM+HH) = 259,000 AF/342,590 AF = 76% Capacity; 94% Average**
- ❖ **POWER PRODUCTION – ~ 10 HRS per day @.**
- ❖ **MFAR @ R11: 7 day daily average ~700 cfs**
- ❖ **Recreation flows for rafting started Saturday May 23, and run every day (7 days per week) this summer, ending Monday September 7. Oxbow/Ralston Afterbay will release **1000 CFS from 0800-1200** each day to meet this requirement.**
- ❖ PCWA's recently issued FERC license includes a provision for providing early releases from Oxbow Powerhouse of 1000 cfs to support Class II boating in the confluence area (in addition to the Class IV whitewater schedule noted above), which includes the following dates:

Sunday, July 19: 1000 cfs, 4am to 12pm (1 Sunday in July as prescribed by the FERC license)
Saturday, July 25: 1000 cfs, 4am to 12pm (replaces the cancelled Western States 100 race day)
Saturday, August 1: 1000 cfs, 4am to 12pm (cancelled Tevis Cup race day)
Friday, September 4: 1000 cfs, 4am to 12 pm (Friday before Labor Day as prescribed by the FERC license)

MFP Reservoir and Snowpack Storage

As of 7/13/2020



American River Summary Conditions – July (On-going)

- To date July has been quite hot. Nights cooling below 60 F have helped reduced instream warming.

Storage/Release Management Conditions

- Releases currently at 4000 cfs to support Delta needs.

Temperature Management:

- Per Temperature Schedule 35 July Objective is 68 F at Watt Ave Bridge
- Upper shutter on Unit 1 was raised on Tuesday June 23, 2020.

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

DAILY CVP WATER SUPPLY REPORT

JULY 14, 2020

RUN DATE: July 15, 2020

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2019	WY 2020	15 YR MEDIAN
TRINITY	LEWISTON	969	463	706
SACRAMENTO	KESWICK	10,937	12,419	12,419
FEATHER	OROVILLE (SWP)	5,300	3,300	4,500
AMERICAN	NIMBUS	3,845	3,966	3,853
STANISLAUS	GOODWIN	807	202	304
SAN JOAQUIN	FRIANT	998	399	352

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

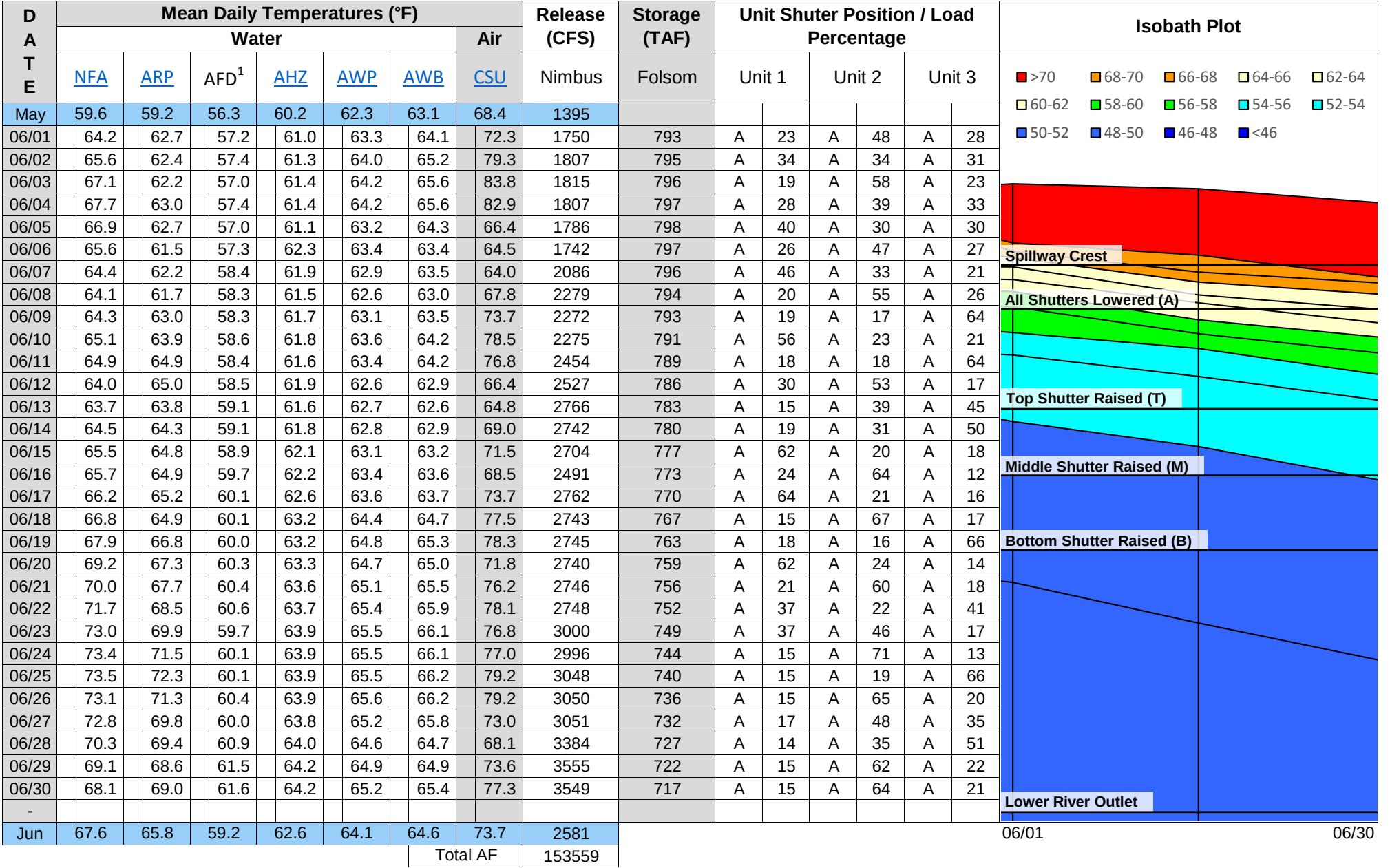
RESERVOIR	CAPACITY	15 YR AVG	WY 2019	WY 2020	% OF 15 YR AVG
TRINITY	2,448	1,704	2,264	1,700	100
SHASTA	4,552	3,239	4,209	2,929	90
FOLSOM	977	693	877	640	92
NEW MELONES	2,420	1,515	2,205	1,683	111
FED. SAN LUIS	966	354	668	231	65
TOTAL NORTH CVP	11,363	7,504	10,223	7,183	96
MILLERTON	520	398	516	335	84
OROVILLE (SWP)	3,538	2,376	3,330	2,026	85

ACCUMULATED INFLOW FOR WATER YEAR TO DATE IN THOUSANDS OF ACRE-FEET

RESERVOIR	CURRENT WY 2020	WY 1977	WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	451	193	2,690	1,133	40
SHASTA	2,855	2,098	10,032	4,696	61
FOLSOM	1,298	298	6,051	2,468	53
NEW MELONES	549	----	2,520	951	58
MILLERTON	756	229	3,951	1,377	55

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2020	WY 1977	WY 1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	19.31	13.70	54.73	31.24 (58)	62	0.00
SACRAMENTO AT SHASTA DAM	34.51	17.28	112.44	60.96 (63)	57	0.00
AMERICAN AT BLUE CANYON	39.50	15.70	103.88	65.78 (45)	60	0.00
STANISLAUS AT NEW MELONES	22.35	----	45.33	27.24 (42)	82	0.00
SAN JOAQUIN AT HUNTINGTON LK	28.25	17.20	81.40	41.12 (45)	69	0.00



Legend

- ? = 1-9 hours of data missing
- ! = 10 or more hours of data missing
- # = Station out of service
- = Monthly Averages

- A = All Shutters Lowered
- T = Top Shutter Raised
- M = Middle Shutter Raised
- B = Bottom Shutter Raised
- O = Unit Outage

Notes

- 1 AFD is a weighted average using hourly flow values
- 2
- 3
- 4
- 5
- 6

D A T E	Mean Daily Temperatures (°F)							Release (CFS)	Storage (TAF)	Unit Shuter Position / Load Percentage						Isobath Plot				
	Water						Air			Percentage										
	NFA	ARP	AFD ¹	AHZ	AWP	AWB	CSU			Nimbus	Folsom	Unit 1		Unit 2		Unit 3				
Jun	67.6	65.8	59.2	62.6	64.1	64.6	73.7	2581								>70 68-70 66-68 64-66 62-64 60-62 58-60 56-58 54-56 52-54 50-52 48-50 46-48 <46 Spillway Crest All Shutters Lowered (A) Top Shutter Raised (T) Middle Shutter Raised (M) Bottom Shutter Raised (B) Lower River Outlet				
07/01	68.6	70.6	61.7	64.6	65.6	65.7	75.3	3551	711	A	15	A	18	A	67					
07/02	68.5	71.7	61.7	64.5	65.3	65.4	69.7	3521	706	A	16	A	58	A	27					
07/03	67.3	70.7	62.0	64.7	65.5	65.5	70.1	3502	701	A	15	A	22	A	63					
07/04	65.9	69.7	62.6	64.8	65.8	65.9	77.5	3496	696	A	15	A	53	A	32					
07/05	65.2	69.7	62.8	65.2	66.2	66.4	79.3	3497	691	A	14	A	33	A	53					
07/06	64.8	69.7	62.0	65.4	66.2	66.3	74.3	3493	686	A	21	A	62	A	17					
07/07	64.6	69.3	62.3	65.3	66.0	65.9	72.7	3783	681	A	19	A	40	A	40					
07/08	64.3	70.1	62.7	65.1	65.9	66.0	78.4	3972	674	A	20	A	35	A	44					
07/09	64.8	70.8	63.4	65.5	66.2	66.3	78.3	3971	668	A	15	A	42	A	43					
07/10	65.3	70.3	63.7	66.1	67.0	67.0	81.9	3968	662	A	16	A	47	A	37					
07/11	65.3	68.0	63.8	66.3	67.1	67.3	83.8	3968	658	A	18	A	54	A	29					
07/12	65.1	68.3	63.8	66.6	67.5	67.5	82.9	3966	652	A	20	A	33	A	47					
07/13	64.9	68.6	63.1	66.2	67.3	67.3	76.7	3965	646	A	27	A	34	A	40					
07/14	65.9	69.4	63.6	66.1	66.7	66.7	72.2	3966	640	A	22	A	62	A	16					
07/15																				
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07/28																				
07/29																				
07/30																				
07/31																				
Jul	65.7	69.8	62.8	65.5	66.3	66.4	76.6	3759								07/01	07/31			

Legend

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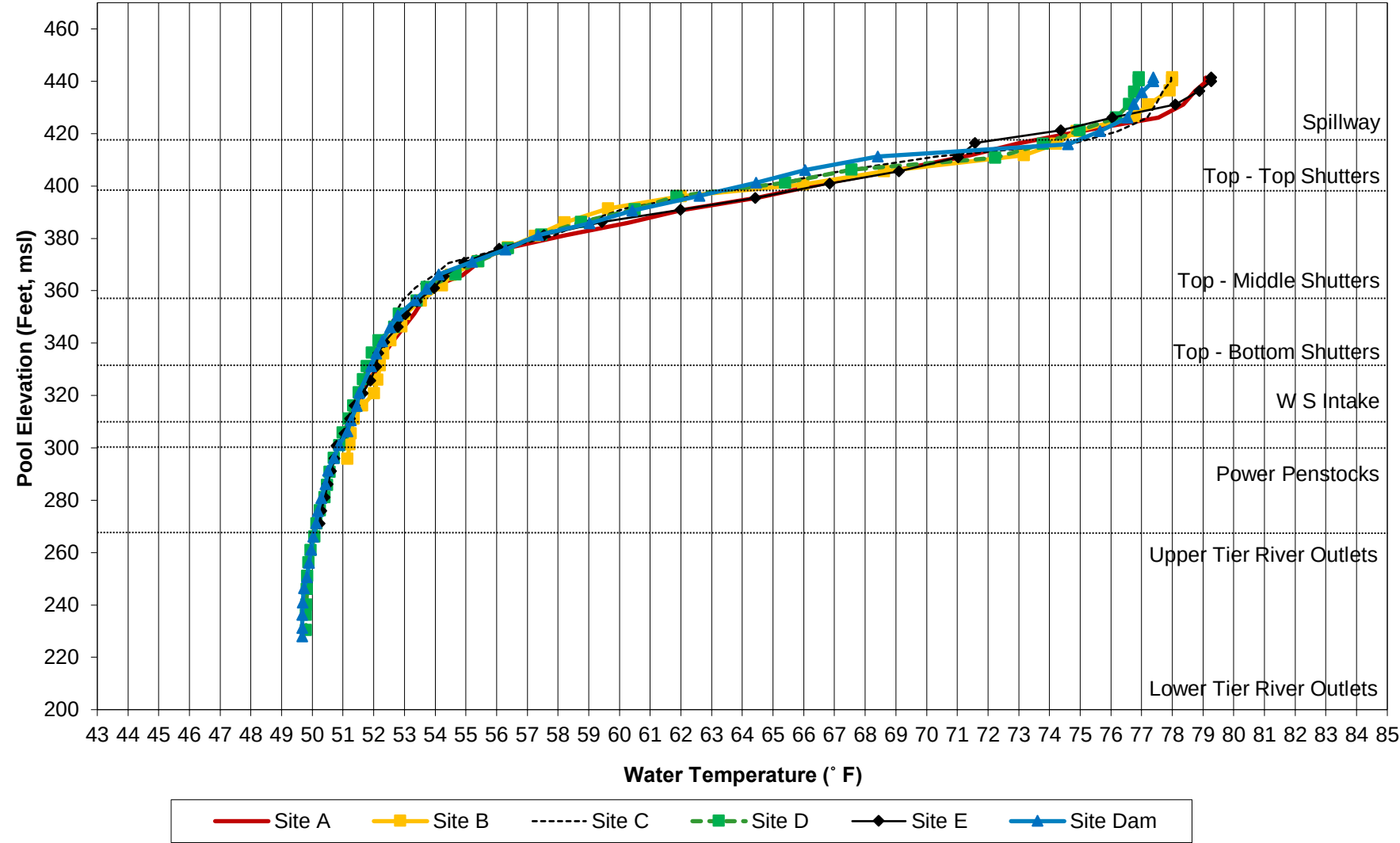
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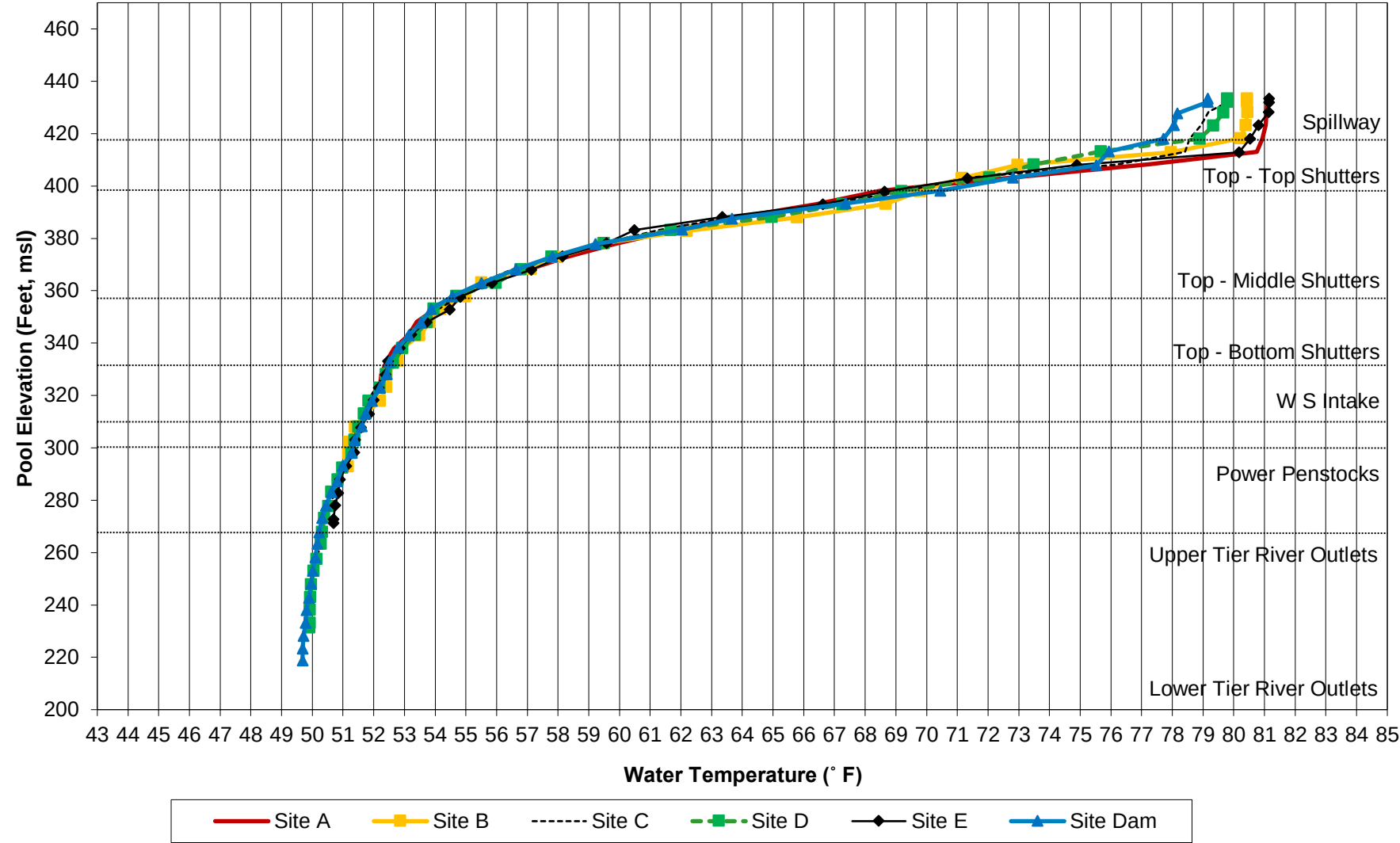
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Folsom Lake Temperature Profiles: 30-Jun-2020

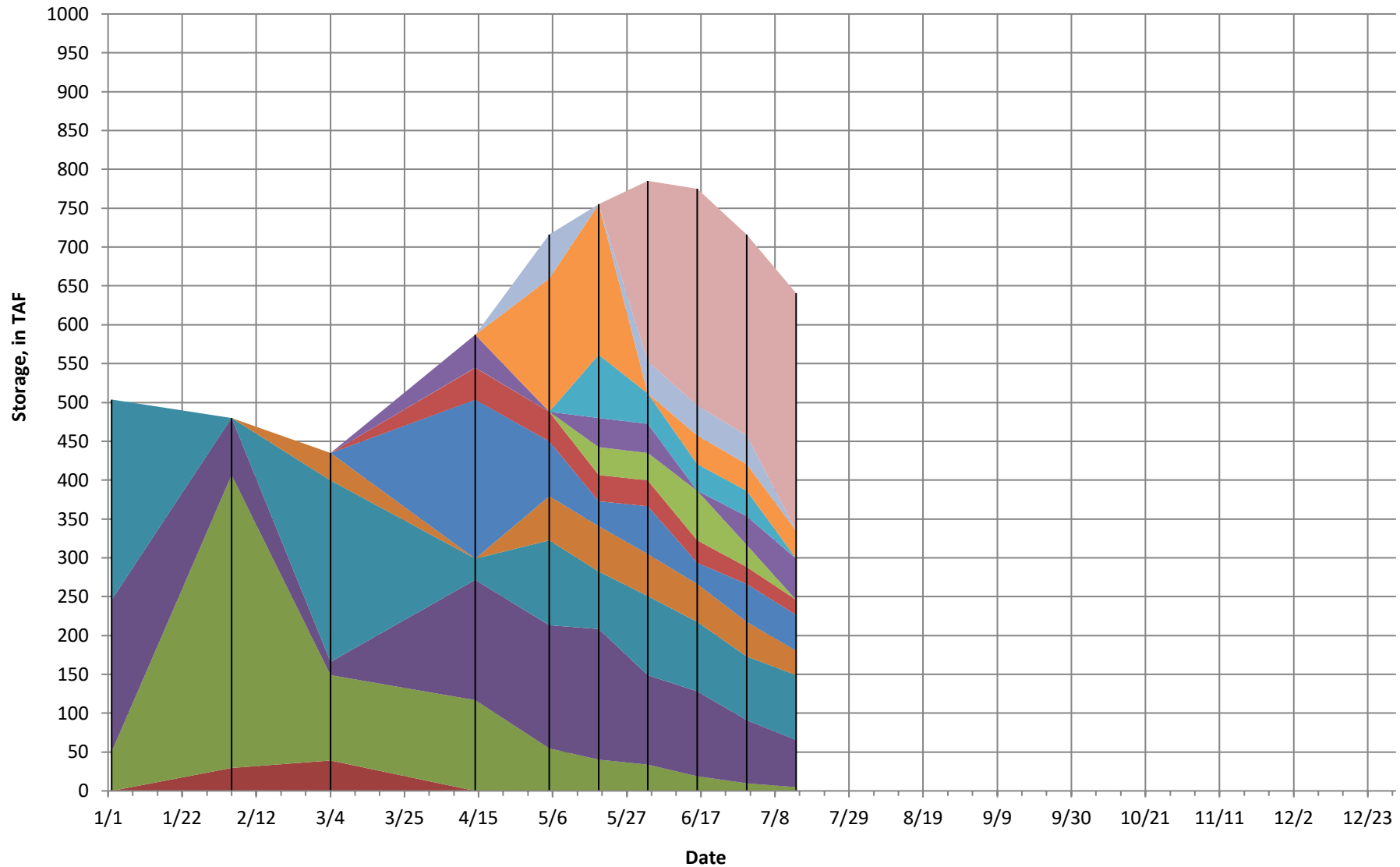


Folsom Lake Temperature Profiles: 14-Jul-2020



Folsom Lake Isothermobaths - 2020

(Water Temperature, in °F)



Folsom Cold Water Pool⁷

Folsom Reservoir: Cold Water Volume

Profile Date	Volume less than 58°F (TAF)
7/14/20	226.58

Penstock Elevation (ft)	Volume (TAF)	Approximate Max. Temp (F)
327	83	52.3

Proposed Power Generation Bypass/Lower River Outlet for Temperature Management

Date	Bypass/Lower River Outlet (cfs)	Temperature not to exceed downstream of Nimbus Dam (°F)	Cumulative Use of Cold Water Pool Volume (TAF)

DRAFT July 20

90% Runoff Exceedance Outlook:

Inflow based on 90% historical average runoff for all months.

Federal End of the Month Storage/Elevation (TAF/Feet)

		July	Aug	Sep	Oct	Nov	Dec
Folsom	717	537	378	297	293	293	303
		421	400	387	386	386	388

Monthly River Releases (cfs)

American	3706	3502	2116	710	720	710
MRR	1541	1541	1541	725	725	725

50% Runoff Exceedance Outlook:

Inflow based on 50% historical average runoff for all months.

Federal End of the Month Storage/Elevation (TAF/Feet)

		July	Aug	Sep	Oct	Nov	Dec
Folsom	717	542	449	417	400	400	420
Elev.		422	410	405	403	403	406

Monthly River Releases (cfs)

American	3803	2500	1530	1500	1502	1500
MRR	1541	1541	1541	725	725	725

Please note:

CVP actual operations do not follow any forecasted operation or outlook; actual operations are based on real-time conditions.

CVP operational forecasts or outlooks consider general system-wide dynamics and do not necessarily address specific watershed/tributary details.

CVP releases represent monthly averages.

CVP operations are updated monthly as new hydrology information is made available December through May.

Shaded area represents less confident hydrologic inputs of the future water year.

July 2020 Updated 90%-Exceedance Outlook

USBR Pred.

Temperature Schedule = 40

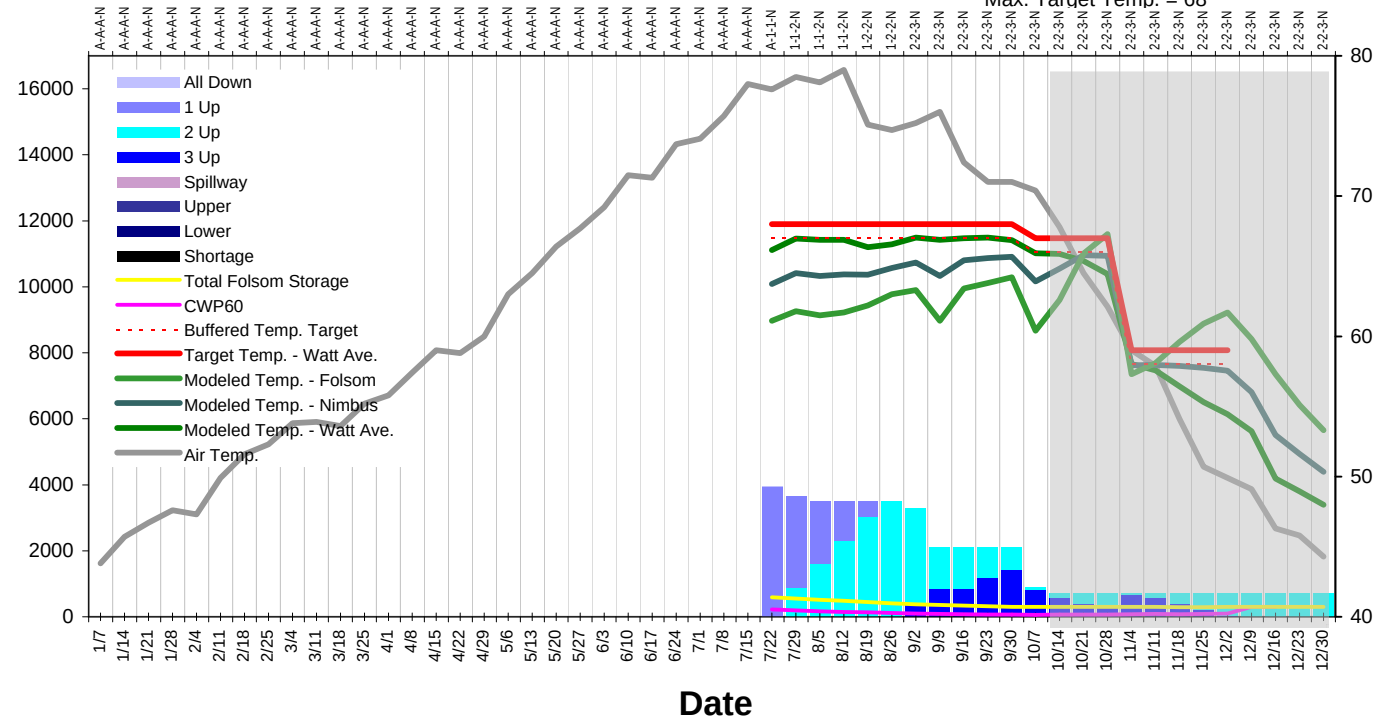
9/30 - CWP<60° (TAF, Constraint = 0) = 64

9/30 - Folsom Storage (TAF) = 303

Number of Excursions = 0

Max. Target Temp. = 68°

Release (cfs) / Volume (TAF)



Temperature (°F)

Date

July 2020 Updated 50%-Exceedance Outlo

USBR Pred.

Temperature Schedule = 30

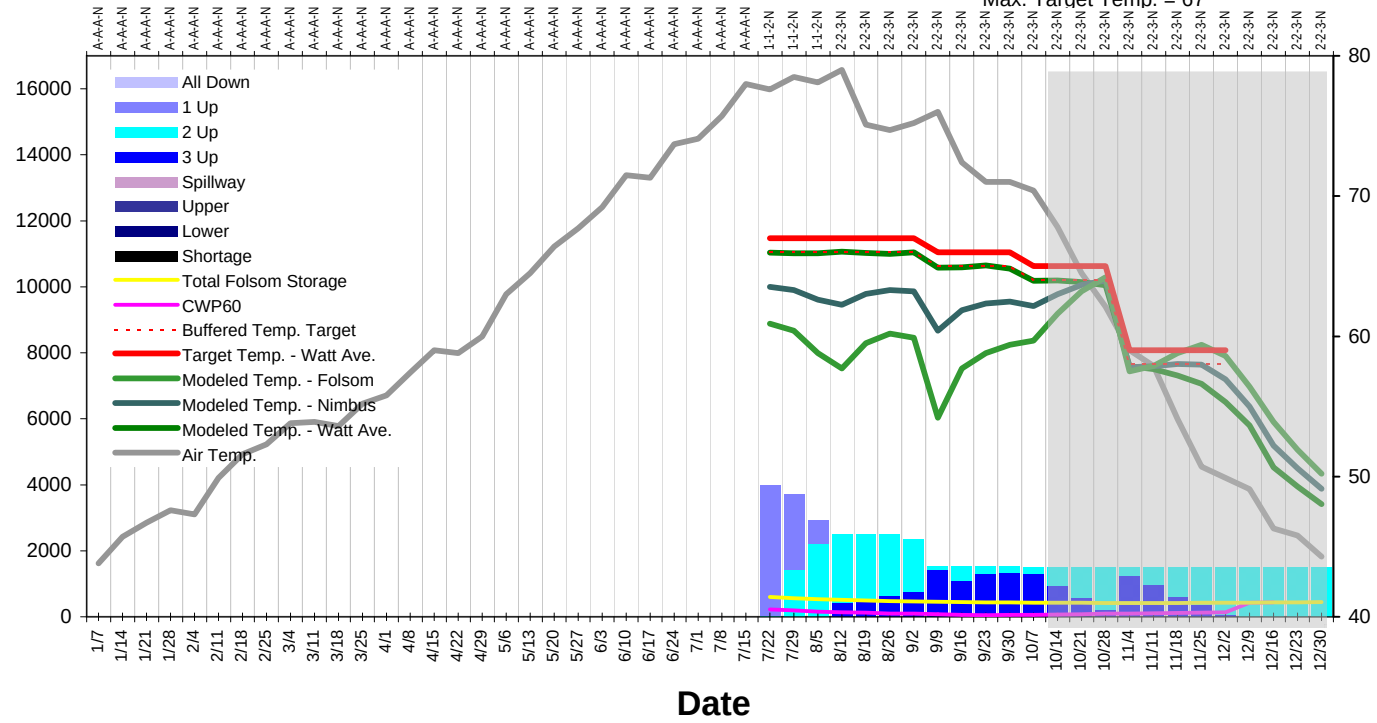
9/30 - CWP<60° (TAF, Constraint = 0) = 56

9/30 - Folsom Storage (TAF) = 434

Number of Excursions = 0

Max. Target Temp. = 67°

Release (cfs) / Volume (TAF)



Temperature (°F)